

REGULATED CHARGE PUMP

Abstract

A regulated charge pump has a negative charge pump for generating a first output voltage according to an oscillation signal, and a regulator. The regulator has a level shift circuit, a differential amplifier for generating a compare signal, and an oscillator for generating the oscillation signal according to the compare signal. The level shift circuit has a plurality serially connected PMOS transistors. A first PMOS transistor has a first source connected to a first reference voltage, and a gate and a drain both connected to an output end of the level shift circuit. A second PMOS has a gate and a drain both connected to an output end of the negative charge pump.